

NOTES ON SYNONYMIES, RECOMBINATIONS, AND LECTOTYPE
DESIGNATIONS IN NATHAN BANKS' SPECIES OF
NOTHRUS (ACARI: ORIBATEI)

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Abstract.—The disposition of Banks' oribatid mite taxa presently placed in *Nothrus* is modified as follows. Three are recombined: *Platynothrus banksi* (Banks), *Platynothrus carinatus* (Banks), and *Trimalaconothrus simplex* (Banks). Four are designated junior synonyms: *Nothrus bipilis* (= *N. palustris*), *N. excisus* (= *Camisia segnis*), *N. rugulosus* (= *C. horrida*), and *N. taurinus* (= *C. spinifer*). Lectotypes are designated for *N. bipilis*, *N. simplex*, and *N. truncatus*.

As pointed out in a previous paper (Norton, 1978), most of the oribatid mites described by Nathan Banks are in need of reinvestigation. Of the ten species assigned to the genus *Nothrus* only one, *N. marinus* Banks, is adequately known, being the type-species of *Hygroribates* (Jacot, 1934).

The following taxonomic judgements are based on examination of Banks' existing original material, all of which is deposited in the Museum of Comparative Zoology (MCZ) at Harvard University. Banks kept most of his oribatid material in alcohol and designated types only in the few instances when a balsam slide was prepared. All alcoholics referred to in this paper are listed as "suspected types" in unpublished MCZ listings. In a number of instances (probably in the early 1930's) the oribatologist A. P. Jacot, recognizable by his characteristic handwriting, mounted one or more of Banks' original series, labelled them "type" or "cotype," and left the remainder in alcohol with no type designation.

The older system of setal nomenclature used by Sellnick and Forsslund (1955) is employed for ease of comparisons. I thank Dr. H. W. Levi for providing access to MCZ specimens.

Nothrus bipilis Banks, 1895a

Although no specimens exist with a type-label, a vial in the MCZ contains three specimens which are undoubtedly those to which Banks referred in

the original description; they are considered by me to be syntypes. The labels bear the published data and are in Banks' handwriting. Since two species are represented by the three specimens, I designate the single adult (964 μ total length) as LECTOTYPE. The diagnostic "long, curved, simple hair" (seta K1) mentioned in the original description has been lost on each side, but the mite is otherwise intact. The two "young specimens" to which Banks refers are both *Nothrus* tritonymphs, but only the larger (840 μ) belongs to the same species as the adult; the diagnostic seta K1 is present. This specimen is designated a PARALECTOTYPE. The smaller tritonymph (704 μ) is a member of another, unidentified *Nothrus* species.

After examination of published descriptions of the European species *Nothrus palustris* C. L. Koch, and specimens from England, Poland, and Germany, I consider *N. bipilis* to be a junior subjective synonym of *N. palustris*. The only noted difference involves notogastral seta PN2. In *N. palustris* this seta is 1.5 to 2 times the length of F2 and has uniform breadth throughout. The lectotype specimen of *N. bipilis* and the four specimens in my collection (all from Long Island) have seta PN2 equal to F2 in length and slightly clavate. On the weight of many similar character states and the clear separation of these two taxa from other *Nothrus* species, the synonymy seems justified.

Nothrus carinatus Banks, 1910

Three specimens with the data of the original description are mounted on a single slide deposited in the MCZ. The label, in Banks' handwriting, designates these as "type"; and all can be considered syntypes. The modern generic placement is indicated on the label below the original name; but to date, recombination has not been mentioned in the literature.

Platynothrus carinatus (Banks) (NEW COMBINATION) is distinguishable from all other known species by having the combination of short setae in the C, D, and E series (barely reaching the insertion of the next posteriad seta) and having a lateral notogastral carina (distinctly longer than the medial carina) which curves laterally to reach the insertion of seta PN2. The three specimens range from 694–723 μ , total length.

Nothrus furcatus Banks, 1895a

Six specimens which apparently comprised Banks' original series are housed in the MCZ. A. P. Jacot mounted three of these in balsam and labeled them as "types"; a note on the label reads "3 out of 6." These, and the remaining alcoholics, can all be considered syntypes.

This species was renamed *Nothrus banksi* by Michael (1898) who noted the homonymy with *N. furcatus* C. L. Koch. Under present generic concepts the species must be recombined to *Platynothrus banksi* (Michael) (NEW COMBINATION). Banks' (1904) subsequently published figure sat-

isfactorily represents the characteristic anterior fusion of the medial notogastral carinae, but his original length measurement of .7 mm is inaccurate; the syntypes range from 790–850 μ ; and specimens in my collection from other areas of central Washington are as large as 920 μ .

Nothrus excisus Banks, 1895a

Apparently none of Banks' original specimens presently exist. There is, however, a mounted specimen in the MCZ, collected in Nebraska in 1938, which is labelled "*Camisia excisus* Bks" (a combination never used in the literature) in Banks' handwriting. This specimen was examined and found to be *Camisia segnis* (Hermann) sensu Grandjean (1936), a Holarctic species characteristically found on trees.

The length of *N. excisus* given in the original description (.7 mm) is slightly less than the range of *C. segnis* (750–830 μ) given by Grandjean, but Banks' measurements were crude and often inaccurate. Otherwise, Banks' description is consistent with the latter species; and I designate *N. excisus* a junior subjective synonym of *Camisia segnis* (Hermann).

Nothrus rugulosus Banks, 1895a

A slightly damaged balsam slide, with two specimens of this species, and a vial of three alcoholic specimens, all with the original data, are deposited in the MCZ. The slide, labelled by A. P. Jacot, bears a note reading "3 left in vial." All five of the existing specimens can be considered syntypes.

Nothrus rugulosus is hereby designated a junior subjective synonym of *Camisia horrida* (Hermann), sensu Grandjean (1936), a Holarctic species originally described from Europe. This opinion is based on examination of Grandjean's and Sellnick and Forsslund's (1955) redescrptions, as well as specimens from Poland. The type-habitat of *N. rugulosus* (under bark of a dead tree) is consistent with the habitats of *C. horrida* in Europe. The species illustrated by Sengbusch (1951) under the name *N. rugulosus* is a true *Nothrus*, and not Banks' species.

Nothrus simplex Banks, 1895b

A single alcoholic vial with Banks' original labels is present in the MCZ collections and holds three specimens, the examination of which indicates that Banks confused two species under this name. The single adult (762 μ , total length) is a *Trimalacnothrus* species and is missing the left leg I, the right leg II, and most notogastral and prodorsal setae. This specimen is hereby designated the LECTOTYPE and the name is recombined to *Trimalacnothrus simplex* (Banks) (NEW COMBINATION). Based on integumental structure and general facies, the species is similar to and possibly conspecific with *T. glaber* (Michael); but because of the damaged type, further collection is needed.

The other two specimens are clearly nymphs of the family Achipteriidae. Banks erroneously considered these, with the "corrugated epidermis," to be immatures of the species represented by the adult specimen.

Nothrus taurinus Banks, 1906

The single specimen on which the description was based, bearing Banks' original labels, is in alcohol in the MCZ and can be considered the holotype. After examination of this specimen I designate *N. taurinus* a junior subjective synonym of *Camisia spinifer* (C. L. Koch), a common Holarctic species. A study by Pearse (1946), for which Banks identified the mites, recorded this species under the name *Camisia taurinus* Banks (sic).

Banks' original drawing is misleading, since the body outline included the debris adhering to the notogaster. A portion of this debris was removed during my investigation, exposing the characteristic setation and tuberculation of *C. spinifer*.

Nothrus terminalis Banks, 1910

A single balsam-mounted specimen, of about 700 μ total length, is housed in the MCZ. It is labelled in Banks' handwriting and designated "type." Although the number of specimens Banks examined is not indicated in the original description, no others are known to exist; and this specimen can be considered the holotype. The original figure (Plate I, Fig. 8) is misleading; the setae illustrated are more strongly clavate on the holotype.

At least nine described taxa are involved in what can be loosely considered the "biciliatus group"; that is, species with short, clavate setae K1, PN1, and PN2. Monodactyl members include *N. terminalis* (and its subspecies *N. t. carolinae* Jacot), *N. truncatus* Banks (including its subspecies *N. t. robustus* Jacot and *N. t. silvicus* Jacot) and *N. monodactylus* (Berlese) from North America, and *N. pulchellus* (Berlese) from Italy. Tridactylous members include *N. biciliatus* (C. L. Koch) (sensu Sellnick and Forslund 1955) from Europe and North America, and *N. reticulatus* Sitnikova from western Asia. Although detailed investigations have not yet been made, the number of claws in these species may prove to vary within or between populations, as Grandjean (1965) noted for *N. silvestris* Nicolet. As Grandjean has indicated, all *Nothrus* species seem to be apomictic, exhibiting thelytokous parthenogenesis. The validity of taxa in both the "biciliatus group" and the "silvestris group" should eventually be examined with this in mind.

Nothrus truncatus Banks, 1895a

Banks confused two species under this name. A. P. Jacot apparently noted this when mounting five of Banks' original specimens in balsam, leaving four in alcohol. Jacot's label indicates that he identified three of the

mounted specimens as *Nothrus silvestris* and considered the two others as cotypes of *N. truncatus*. The latter specimens have total lengths of 920 and 935 μ , significantly larger than the *N. silvestris* specimens. It is clear from the description that Banks thought the smaller individuals to be immatures of the larger ones. I have selected a LECTOTYPE from among the alcoholic specimens; the remaining alcoholics and two slide-mounted specimens are PARALECTOTYPES.

Nothrus truncatus is the largest of the "bicoloratus group," with a robust, truncate notogaster and monodactyl tarsi. Banks (1904) illustrated *N. truncatus* with three claws; but all of his specimens, and others I have collected from sphagnum bogs in upstate New York, are monodactyl. He probably mistook the proral or unguinal setae for lateral claws.

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